Abstract of the Disclosure

A device for processing a biological sample includes a processing unit having at least one opening to receive a sample vessel and a plurality of processing stations positioned along the opening. The processing stations each have a compression member adapted to compress the sample vessel within the opening and thereby move the sample within the sample vessel among the processing stations. An energy transfer element can be coupled to one or more of the processing stations for transferring thermal energy to the sample at a processing station. The device can be used for PCR processing of nucleic acid samples. A sample vessel of the present invention can be a tubule flow-chamber having a plurality of segments separated by pressure gates. The sample vessel minimizes sample handling by providing a closed tubule in which distinct processing steps can be carried out in each of the segments of the tubule.

09782732.021301